

ZXM64N035G

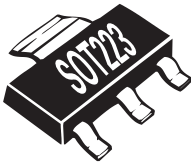
35V N-CHANNEL ENHANCEMENT MODE MOSFET

SUMMARY

$V_{(BR)DSS} = 35V$ ;  $R_{DS(on)} = 0.050\Omega$ ;  $I_D = 6.7A$

DESCRIPTION

This new generation of high cell density planar MOSFETs from Zetex utilises a unique structure that combines the benefits of low on-resistance with fast switching speed. This makes them ideal for high efficiency, low voltage, power management applications.

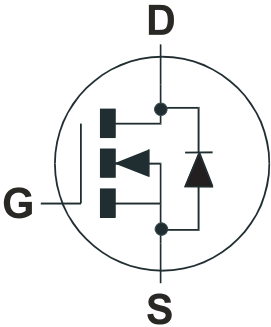


FEATURES

- Low on-resistance
- Fast switching speed
- Low threshold
- Low gate drive
- SOT223 package

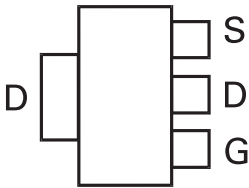
APPLICATIONS

- 50W Class D Audio Output Stage
- Motor Control



ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZXM64N035GTA	7"	12mm	1000 units
ZXM64N035GTC	13"	12mm	4000 units



Top View

DEVICE MARKING

- ZXM6  
4N035

# ZXM64N035G

## ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	$V_{DSS}$	35	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current ( $V_{GS}=10V$ ; $T_A=25^\circ C$ )(b) ( $V_{GS}=10V$ ; $T_A=70^\circ C$ )(b) ( $V_{GS}=10V$ ; $T_A=25^\circ C$ )(a)	$I_D$	6.7 5.4 4.8	A
Pulsed Drain Current (c)	$I_{DM}$	30	A
Continuous Source Current (Body Diode) (b)	$I_S$	2.4	A
Pulsed Source Current (Body Diode)(c)	$I_{SM}$	30	A
Power Dissipation at $T_A=25^\circ C$ (a) Linear Derating Factor	$P_D$	2.0 16	W mW/ $^\circ C$
Power Dissipation at $T_A=25^\circ C$ (b) Linear Derating Factor	$P_D$	3.9 31	W mW/ $^\circ C$
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ C$

## THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	$R_{\theta JA}$	62.5	$^\circ C/W$
Junction to Ambient (b)	$R_{\theta JA}$	32	$^\circ C/W$

## NOTES

(a) For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions

(b) For a device surface mounted on FR4 PCB measured at  $t \leq 10$  secs.

(c) Repetitive rating 25mm x 25mm FR4 PCB,  $D=0.05$  pulse width limited by maximum junction temperature.

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## ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ unless otherwise stated).

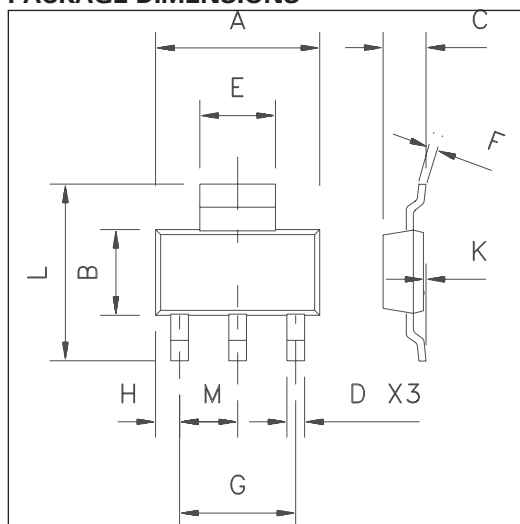
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
STATIC						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	35			V	I <sub>D</sub> =250μA, V <sub>GS</sub> =0V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>			1	μA	V <sub>DS</sub> =35V, V <sub>GS</sub> =0V
Gate-Body Leakage	I <sub>GSS</sub>			100	nA	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V
Gate-Source Threshold Voltage	V <sub>GS(th)</sub>	1.0			V	I <sub>D</sub> =250μA, V <sub>DS</sub> = V <sub>GS</sub>
Static Drain-Source On-State Resistance (1)	R <sub>DS(on)</sub>			0.050 0.062	Ω Ω	V <sub>GS</sub> =10V, I <sub>D</sub> =3.7A V <sub>GS</sub> =4.5V, I <sub>D</sub> =1.9A
Forward Transconductance (1)(3)	g <sub>fs</sub>	4.3			S	V <sub>DS</sub> =10V, I <sub>D</sub> =1.9A
DYNAMIC (3)						
Input Capacitance	C <sub>iss</sub>		950		pF	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1MHz
Output Capacitance	C <sub>oss</sub>		200		pF	
Reverse Transfer Capacitance	C <sub>rss</sub>		50		pF	
SWITCHING(2) (3)						
Turn-On Delay Time	t <sub>d(on)</sub>		4.2		ns	V <sub>DD</sub> =15V, I <sub>D</sub> =3.7A R <sub>G</sub> =6.0Ω, V <sub>GS</sub> =10V
Rise Time	t <sub>r</sub>		4.6		ns	
Turn-Off Delay Time	t <sub>d(off)</sub>		20.5		ns	
Fall Time	t <sub>f</sub>		8		ns	
Total Gate Charge	Q <sub>g</sub>			27	nC	V <sub>DS</sub> =24V, V <sub>GS</sub> =10V, I <sub>D</sub> =3.7A
Gate-Source Charge	Q <sub>gs</sub>			5	nC	
Gate-Drain Charge	Q <sub>gd</sub>			4.5	nC	
SOURCE-DRAIN DIODE						
Diode Forward Voltage (1)	V <sub>SD</sub>			0.95	V	T <sub>J</sub> =25°C, I <sub>S</sub> =3.7A, V <sub>GS</sub> =0V
Reverse Recovery Time (3)	t <sub>rr</sub>		24.5		ns	T <sub>J</sub> =25°C, I <sub>F</sub> =3.7A, di/dt= 100A/μs
Reverse Recovery Charge (3)	Q <sub>rr</sub>		19.1		nC	

### NOTES

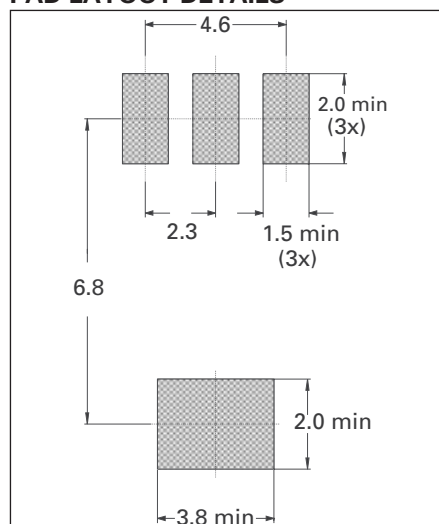
- (1) Measured under pulsed conditions. Width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$  .  
 (2) Switching characteristics are independent of operating junction temperature.  
 (3) For design aid only, not subject to production testing.

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## PACKAGE DIMENSIONS



## PAD LAYOUT DETAILS



DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	6.3	6.7	0.248	0.264
B	3.3	3.7	0.130	0.146
C	-	1.7	-	0.067
D	0.6	0.8	0.024	0.031
E	2.9	3.1	0.114	0.122
F	0.24	0.32	0.009	0.13
G	NOM 4.6		NOM 0.181	
H	0.85	1.05	0.033	0.041
K	0.02	0.10	0.0008	0.004
L	6.7	7.3	0.264	0.287
M	NOM 2.3		NOM 0.0905	

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